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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,049	01/10/2000	NIDHAM BEN RACHED	518-1004	5474

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Barnes & Thornburg  
PO BOX 2786  
CHICAGO, IL 60690-2786

EXAMINER

ABELSON, RONALD B

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 09/08/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/402,049

Applicant(s)

BEN RACHED, NIDHAM

Examiner

Ronald Abelson

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

Art Unit: 2666

***Allowable Subject Matter***

1. The indicated allowability of claims 1-5 is withdrawn in view of the cited passage in Bryan pertaining to the second training sequence being a subsequence of the first training sequence (col. 6 lines 4-8).

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Bryan (US 5,561,468).

Regarding claim 1, Bryan teaches a method and apparatus for transmitting packets (fig. 2) of a predetermined length (col. 3 lines 39 - 42), the apparatus comprising formatting suitable for formatting a first type of packet (fig. 1, packet containing a main header) on the basis of a first training sequence (fig. 1 box 11) and of a first information sequence (fig. 1, data portion attached to main header), wherein in order to send a

Art Unit: 2666

second information sequence longer than the first information sequence (fig. 1, data portion attached to additional header), the formatting means are also designed to format a second type of packet on the basis of a second training sequence that corresponds to a subsequence of the first training sequence (col. 6 lines 4 - 8) shorter than the first training sequence (fig. 1 box 12), and a second information sequence (fig. 1, data portion attached to additional header), the formatting means formatting a packet whose type is identified by an identification signal. In the case of the short training sequence, the packet is identified by the lack of an "alteration sequence" (fig. 1 box 3) that is found for packets containing a "long" training sequence (fig. 1 box 11).

Bryan teaches the packets lengths for both packet types may be equal (col. 3 lines 39 - 42). Therefore, in this instance, the information sequence for the second packet type is longer than for the first packet type since the second packet type does not contain an alteration sequence and the second packet type's training sequence is shorter.

Regarding claim 3, it would have been obvious to one skilled in the art to build a receiver capable of identifying the components of the packets transmitted by the transmitter

Art Unit: 2666

(Bryan: fig. 1). If this were not the case, the transmitted information could not be processed.

Regarding claim 2, a single encoding means to produce first and second information sequences from first and second messages (fig. 2 box 20).

Regarding claim 4, a single decoding means (fig. 5 ox 350).

Regarding claim 5, as previously mentioned in claim 1, the second information sequence (fig. 1, data portion attached to additional header) is longer than the first information sequence (fig. 1, data portion attached to main header), therefore the second information sequence contains more information than the first information sequence.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

Art Unit: 2666

art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bryan in view of Narasimha (US 6,125,125).

Bryan teaches a method and apparatus for transmitting packets (fig. 2) of a predetermined length (col. 3 lines 39 - 42), the apparatus comprising formatting suitable for formatting a first type of packet (fig. 1, packet containing a main header) on the basis of a first training sequence (fig. 1 box 11) and of a first information sequence (fig. 1, data portion attached to main header), wherein in order to send a second information sequence longer than the first information sequence (fig. 1, data portion attached to additional header), the formatting means are also designed to format a second type of packet on the basis of a second training sequence that corresponds to a subsequence of the first training sequence (col. 6 lines 4 - 8) shorter than the first training sequence (fig. 1 box 12), and a second information sequence (fig. 1, data portion attached to additional header), the formatting means formatting a packet whose type is identified by an identification signal. In the case of the short training sequence, the packet is identified by the lack of an "alteration sequence" (fig. 1 box 3) that is

Art Unit: 2666

found for packets containing a "long" training sequence (fig. 1 box 11).

Bryan teaches the packets lengths for both packet types may be equal (col. 3 lines 39 - 42). Therefore, in this instance, the information sequence for the second packet type is longer than for the first packet type since the second packet type does not contain an alteration sequence and the second packet type's training sequence is shorter.

Bryan is silent on the second training sequence being orthogonal to subsequences of the same length of the first training sequence.

Narasimha teaches orthogonal training sequences (col. 3 lines 12-14).

Therefore it would have been obvious to one of ordinary skill in the art, having both Bryan and Narasimha before him/her and with the teachings [a] as shown by Bryan, a method of transmitting packets having training sequences where one training sequences of different lengths, and [b] as shown by Narasimha, orthogonal training sequences, to be motivated to modify the system of Bryan by modifying the second training sequence being orthogonal to subsequences of the same length of the first training sequence. This modification can be performed

Art Unit: 2666

in software. This would improve the system since orthogonal sequences are most easily distinguishable from one another.

***Response to Arguments***

5. The examiner accepts the applicant's argument regarding the term "substantially orthogonal" in the specification.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.



Application/Control Number: 09/402,049

Page 8

Art Unit: 2666

*RA*

Ronald Abelson

Examiner

Art Unit 2666

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August 22, 2003

*Seema S. Rao*

Seema S. Rao

*9/3/03*

Supervisory Patent Examiner

AU 2666

August 22, 2003

Official fax number: 703-872-9314

**SEEMA S. RAO**

**SUPERVISORY PATENT EXAMINER**

**TECHNOLOGY CENTER 2600**